

3.6. Greenhouse Gas Emissions

This section addresses potential greenhouse gas impacts that may result from construction and/or operation of the proposed Belmont Village Encinitas-by-the-Sea Project. The following discussion addresses the existing conditions in the Project area, identifies applicable regulations, identifies and analyzes environmental impacts, and recommends measures to reduce or avoid adverse impacts anticipated from implementation of the Project, as applicable.

The analysis in this section is based on the *Greenhouse Gas Study* prepared by Birdseye Planning Group (Birdseye, 2019). The Greenhouse Gas Study was peer reviewed by BRG Consulting, Inc. The report and its attachments are included as Appendix G.

Scoping Issues Addressed

During the scoping period for the Project, a scoping meeting was conducted, and written comments were received from agencies and the public. The following issue related to the City's Climate Action Plan were raised by the general public and is addressed in this section:

- Project should be a sustainable eco-just community to meet climate action plan criteria.

3.6.1. Existing Conditions

Gases that absorb and re-emit infrared radiation in the atmosphere are called greenhouse gases (GHGs). GHGs are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced climate change include carbon dioxide (CO₂), methane (CH₄), nitrous oxides (N₂O), fluorinated gases such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆).

GHGs are emitted by both natural processes and human activities. Different types of GHGs have varying global warming potentials (GWPs). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). Because GHGs absorb different amounts of heat, a common reference gas (CO₂) is used to relate the amount of heat absorbed to the amount of the gas emissions, referred to as "carbon dioxide equivalent" (CO₂E), and is the amount of a GHG emitted multiplied by its GWP.

Total U.S. GHG emissions were 6,587 million metric tons (MMT) CO₂E in 2015 however, emissions vary annually due to factors such as economic activity, demographic influences, environmental conditions such as drought, and the impact of regulatory efforts to control GHG emissions. Based upon the California Air Resources Board (CARB) California Greenhouse Gas Inventory, 2016 edition, California produced 441.5 MMT CO₂E in 2014. The major source of GHG in California is transportation, contributing 37 percent of the state's total GHG emissions. The industrial sector is the second largest source, contributing 24 percent of the state's GHG emissions.

In 2018, the City of Encinitas adopted the City of Encinitas Climate Action Plan (CAP) to provide guidance to the City to achieve statewide reduction targets and to respond and adapt to the impacts of climate change. The City of Encinitas emitted 483,773 metric tons (MT) CO₂E during 2012 (City of Encinitas, 2018). In order to be consistent with recommendations from the Assembly Bill (AB) 32 2008 Scoping Plan, the City must achieve a 13 percent reduction from 2012 levels by 2020 and a 41 percent reduction by 2030 to be in line with the statewide targets which equates to reducing emissions by 53,232 MT CO₂E by 2020 and 197,724 MT CO₂E by 2030.

3.6.2. Regulatory Framework

Federal

Federal Clean Air Act (CAA)

In 2007, the U.S. Supreme Court ruled that CO₂ is an air pollutant as defined under the CAA, and the U.S. Environmental Protection Agency has the authority to regulate emissions of GHG.

State

Executive Order S-3-05

In 2005, former Governor Schwarzenegger issued Executive Order (EO) S-3-05, establishing statewide GHG emissions reduction targets. EO S-3-05 states that by 2020, emissions shall be reduced to 1990 levels; and by 2050, emissions shall be reduced to 80 percent of 1990 levels. In response to EO S-3-05, CalEPA created the Climate Action Team (CAT), which in March 2006 published the Climate Action Team Report (the “2006 CAT Report”). The 2006 CAT Report recommended various strategies that the state could pursue to reduce GHG emissions. These strategies could be implemented by various state agencies to ensure that the emission reduction targets in EO S-3-05 are met and can be met with existing authority of the state agencies. The strategies include the reduction of passenger and light duty truck emissions, the reduction of idling times for diesel trucks, an overhaul of shipping technology/infrastructure, increased use of alternative fuels, increased recycling, and landfill methane capture, etc.

Assembly Bill 32 (AB 32)

California’s major initiative for reducing GHG emissions is outlined in Assembly Bill 32 (AB 32), the “California Global Warming Solutions Act of 2006,” signed into law in 2006. AB 32 codifies the Statewide goal of reducing GHG emissions to 1990 levels by 2020 (essentially a 15% reduction below 2005 emission levels; the same requirement as under S-3-05) and requires ARB to prepare a Scoping Plan that outlines the main State strategies for reducing GHGs to meet the 2020 deadline. In addition, AB 32 requires ARB to adopt regulations to require reporting and verification of statewide GHG emissions. After completing a comprehensive review and update process, the ARB approved a 1990 statewide GHG level and 2020 limit of 427 MMT CO₂E. The Scoping Plan was

approved by ARB on December 11, 2008 and includes measures to address GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among other measures. The Scoping Plan includes a range of GHG reduction actions that may include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms.

Executive Order S-01-07

Executive Order S-01-07 was enacted on January 18, 2007. The order mandates that a Low Carbon Fuel Standard (“LCFS”) for transportation fuels be established for California to reduce the carbon intensity of California’s transportation fuels by at least 10 percent by 2020.

Assembly Bill 939 and Senate Bill 1374

Assembly Bill 939 (AB 939) requires that each jurisdiction in California to divert at least 50 percent of its waste away from landfills, whether through waste reduction, recycling or other means. Senate Bill 1374 (SB 1374) requires the California Integrated Waste Management Board to adopt a model ordinance by March 1, 2004 suitable for adoption by any local agency to require 50 to 75 percent diversion of construction and demolition of waste materials from landfills.

Senate Bill 1368

Senate Bill 1368 (SB 1368) is the companion Bill of AB 32 and was adopted September 2006. SB 1368 required the California Public Utilities Commission (CPUC) to establish a performance standard for baseload generation of GHG emissions by investor-owned utilities by February 1, 2007 and for local publicly owned utilities by June 30, 2007. These standards could not exceed the GHG emissions rate from a baseload combined-cycle, natural gas-fired plant. Furthermore, the legislation states that all electricity provided to the State, including imported electricity, must be generated by plants that meet the standards set by CPUC and California Energy Commission (CEC).

Senate Bill 97

Senate Bill 97 (SB 97) was adopted August 2007 and acknowledges that climate change is an environmental issue that requires analysis under CEQA. SB 97 directed the Governor’s Office of Planning and Research (OPR), which is part of the State Natural Resources Agency, to prepare, develop, and transmit to CARB guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA, by July 1, 2009. The Natural Resources Agency as required to certify and adopt those guidelines by January 1, 2010. Pursuant to the requirements of SB 97 as stated above, on December 30, 2009 the Natural Resources Agency adopted amendments to the state CEQA guidelines that address GHG emissions. The CEQA Guidelines Amendments changed sections of the CEQA Guidelines and incorporated GHG language throughout the Guidelines. However, no GHG emissions thresholds of significance were provided

and no specific mitigation measures were identified. The GHG emission reduction amendments went into effect on March 18, 2010 and are summarized below:

- Climate action plans and other greenhouse gas reduction plans can be used to determine whether a project has significant impacts, based upon its compliance with the plan.

Local governments are encouraged to quantify the greenhouse gas emissions of proposed projects, noting that they have the freedom to select the models and methodologies that best meet their needs and circumstances. The section also recommends consideration of several qualitative factors that may be used in the determination of significance, such as the extent to which the given project complies with state, regional, or local GHG reduction plans and policies. OPR does not set or dictate specific thresholds of significance. Consistent with existing CEQA Guidelines, OPR encourages local governments to develop and publish their own thresholds of significance for GHG impacts assessment.

- When creating their own thresholds of significance, local governments may consider the thresholds of significance adopted or recommended by other public agencies or recommended by experts.
- New amendments include guidelines for determining methods to mitigate the effects of greenhouse gas emissions in Appendix F of the CEQA Guidelines.
- OPR is clear to state that “to qualify as mitigation, specific measures from an existing plan must be identified and incorporated into the project; general compliance with a plan, by itself, is not mitigation.”
- OPR’s emphasizes the advantages of analyzing GHG impacts on an institutional, programmatic level. OPR therefore approves tiering of environmental analyses and highlights some benefits of such an approach.
- Environmental impact reports (EIRs) must specifically consider a project’s energy use and energy efficiency potential.

Senate Bills 1078, 107, and X1-2 and Executive Orders S-14-08 and S-21-09

Senate Bill 1078 (SB 1078) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. Senate Bill 107 (SB 107) changed the target date to 2010. Executive Order S-14-08 was signed on November 2008 and expands the State’s Renewable Energy Standard to 33 percent renewable energy by 2020. Executive Order S-21-09 directed CARB to adopt regulations by July 31, 2010 to enforce S-14-08. Senate Bill X1-2 codifies the 33 percent renewable energy requirement by 2020.

California Code of Regulations (CCR) Title 24, Part 6

CCR Title 24, Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24) were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. Although it was not originally intended to reduce GHG emissions, electricity production by fossil fuels results in GHG emissions and energy efficient buildings require less electricity. Therefore, increased energy efficiency results in decreased GHG emissions.

The Energy Commission adopted 2008 Standards on April 23, 2008 and the Building Standards Commission approved them for publication on September 11, 2008. These updates became effective on August 1, 2009. All buildings for which an application for a building permit is submitted on or after July 1, 2014 must follow the 2013 standards. The 2013 commercial standards are estimated to be 30 percent more efficient than the 2008 standards; 2013 residential standards are at least 25 percent more efficient. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases greenhouse gas emissions.

Senate Bill 375

Senate Bill 375 (SB 375) was adopted in September 2008 and aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPO) to adopt a Sustainable Communities Strategy (SCS) or alternate planning strategy (APS) that will prescribe land use allocation in that MPO's Regional Transportation Plan (RTP). CARB, in consultation with each MPO, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's sustainable community's strategy or alternate planning strategy for consistency with its assigned targets.

The San Diego Association of Governments (SANDAG) is the MPO for the San Diego region. SANDAG completed and adopted its SCS, San Diego Forward, in October 2015. CARB's targets for the SANDAG region call for a 7 percent reduction in GHG emissions per capita from automobiles and light-duty trucks compared to 2005 levels by 2020, and a 13 percent reduction by 2035. (The reduction targets are to be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets.) As stated by SANDAG, the strategy set forth in San Diego Forward is to "focus housing and job growth in the urbanized areas where there is existing and planned infrastructure, protect sensitive habitat and open space, invest in a network that gives residents and workers transportation options that reduce GHG emissions, promote equity for all and implement the Plan through incentives and collaboration." In December 2015, CARB—by executive order G-15-075—accepted SANDAG's

GHG emissions quantification analysis and determination that, if implemented, the SCS would achieve CARB's 2020 and 2035 GHG emission reduction targets for the region.

City and County land use policies, including General Plans, are not required to be consistent with the RTP and associated SCS or APS. However, CEQA incentivizes, through streamlining and other provisions, qualified projects that are consistent with an approved SCS or APS and categorized as "transit priority projects."

Senate Bill X7-7

Senate Bill X7-7 (SB X7-7), enacted on November 9, 2009, mandates water conservation targets and efficiency improvements for urban and agricultural water suppliers. SB X7-7 requires the Department of Water Resources (DWR) to develop a task force and technical panel to develop alternative best management practices for the water sector. Additionally, SB X7-7 required the DWR to develop criteria for baseline uses for residential, commercial, and industrial uses for both indoor and landscaped area uses. The DWR was also required to develop targets and regulations that achieve a statewide 20 percent reduction in water usage.

California Green Building Standards

On January 12, 2010, the State Building Standards Commission unanimously adopted updates to the California Green Building Standards Code, which went into effect on January 1, 2011. The Code is a comprehensive and uniform regulatory code for all residential, commercial and school buildings. The California Green Building Standards Code does not prevent a local jurisdiction from adopting a more stringent code as state law provides methods for local enhancements. The Code recognizes that many jurisdictions have developed existing construction and demolition ordinances, and defers to them as the ruling guidance, provided they provide a minimum 50-percent diversion requirement. The code also provides exemptions for areas not served by construction and demolition recycling infrastructure. State building code provides the minimum standard that buildings must meet for occupancy certification. Enforcement is generally through the local building official.

27 CCR Title 24, Part 11: California Green Building Standards (Title 24) became effective in 2001 in response to continued efforts to reduce GHG emissions associated with energy consumption. CCR Title 24, Part 11 now require that new buildings reduce water consumption, employ building commissioning to increase building system efficiencies, divert construction waste from landfills, and install low pollutant-emitting finish materials. One focus of CCR Title 24, Part 11 is water conservation measures, which reduce GHG emissions by reducing electrical consumption associated with pumping and treating water. CCR Title 24, Part 11 has approximately 52 nonresidential mandatory measures and an additional 130 provisions for optional use. Some key mandatory measures for commercial occupancies include specified parking for clean air vehicles, a 20 percent reduction of potable water use within buildings, a 50 percent construction waste diversion from

landfills, use of building finish materials that emit low levels of volatile organic compounds, and commissioning for new, nonresidential buildings over 10,000 square feet.

Executive Order B-30-15

On April 29, 2015, Governor Brown issued an executive order to establish a California greenhouse gas reduction target of 40 percent below 1990 levels by 2030 - the most aggressive benchmark enacted by any government in North America to reduce dangerous carbon emissions over the next decade and a half. This executive action set the stage for the important work being done on climate change by the Legislature. The Governor's executive order aligns California's greenhouse gas reduction targets with those of leading international governments.

California is on track to meet or exceed the current target of reducing greenhouse gas emissions to 1990 levels by 2020, as established in the California Global Warming Solutions Act of 2006 (AB 32). California's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the ultimate goal of reducing emissions 80 percent from 1990 levels by 2050.

Senate Bill 32 and Assembly Bill 197

Senate Bill 32 and Assembly Bill 197 (enacted in 2016) are companion bills that set new statewide GHG reduction targets, make changes to CARB's membership, increase legislative oversight of CARB's climate change-based activities and expand dissemination of GHG and other air quality-related emissions data to enhance transparency and accountability. More specifically, SB 32 codified the 2030 emissions reduction goal of EO B-30-15 by requiring CARB to ensure that statewide GHG emissions are reduced to 40% below 1990 levels by 2030. AB 197 established the Joint Legislative Committee on Climate Change Policies which is comprised of at least three members of the Senate and three members of the Assembly that provide ongoing oversight over implementation of the state's climate policies. AB 197 added two members of the Legislature to CARB as nonvoting members; requires CARB to make available and update (at least annually via its website) emissions data for GHGs, criteria air pollutants, and toxic air contaminants from reporting facilities; and requires CARB to identify specific information for GHG emissions reduction measures when updating the Scoping Plan.

California Environmental Quality Act

The adopted CEQA Guidelines provide general regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents but contain no suggested thresholds of significance for GHG emissions. Instead, lead agencies are given the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHGs and climate change impacts. The general approach to developing a Threshold of Significance for GHG emissions is to identify the emissions level for which a project would not be expected to substantially conflict with existing California legislation adopted to reduce statewide GHG emissions needed to move the state towards climate

stabilization. If a project would generate GHG emissions above the threshold level, its contribution to cumulative impacts would be considered significant.

Local

City of Encinitas Climate Action Plan

The City of Encinitas approved a Climate Action Plan in January 2018. No GHG emission thresholds have been formally adopted by the San Diego Air Pollution Control District (SDAPCD) or City of Encinitas for development projects. For environmental review purposes, the City uses a screening threshold of 900 annual MT CO₂E, which is a suggested CEQA threshold published by the California Air Pollution Control Officers Association for development projects. Projects generating less than 900 MT CO₂E annually are not considered individually or cumulatively significant with respect to impact on climate change. For projects estimated to generate more than 900 MT CO₂E annually, emission reduction measures are incorporated into CalEEMod to achieve a 41% or greater reduction over business as usual (BAU) conditions or that reduce emissions to below 900 MT of CO₂E annually. A reduction of 41% is the statewide average necessary to achieve SB 32 GHG reduction goals and consistency with the City's Climate Action Plan.

City of Encinitas General Plan

Circulation Element

- Policy 1.15: The City will actively support an integrated transportation program that encourages and provides for mass-transit, bicycle transportation, pedestrians, equestrians, and car-pooling. (Coastal Act/30252)
- Policy 3.2: Continue to assist in expanding public transportation and emphasize public transportation in future development with preference given to cost-effective alternatives. (Coastal Act/30252)
- Policy 3.4: Cooperate with San Diego County, SANDAG, and other jurisdictions to help plan and implement: a regional multi-modal transportation system that is accessible to residents in the City. (Coastal Act/30252)
- Policy 3.5: Encourage development of mass transit and transit access points along the existing I-5 freeway corridor or along the railroad right-of-way. (Coastal Act/30252)
- Policy 3.6: The City should provide and encourage efficient links between possible rail transit service and other transportation modes, including rerouting of bus service to interface with transit stops.

Resource Management Element

- Policy 1.1: Require new development to utilize measures designed to conserve water in their construction.

- Policy 1.10: Promote the use of water efficient sprinkling and gardening systems to include ordinances and technology to encourage drought tolerant plants.
- Policy 5.1: The City will monitor and cooperate with the ongoing efforts of the U.S. Environmental Protection Agency, the San Diego Air Pollution Control District, and the State of California Air Resources Board in improving air quality in the regional air basin. The City will implement appropriate strategies from the San Diego County SIP which are consistent with the goals and policies of this plan.
- Policy 6.1: The City will phase in all practical forms of mandatory recycling as soon as possible.
- Policy 9.4: Encourage and adopt standards for the use of drought tolerant and/or natural landscaping and efficient irrigation systems throughout the City. (Coastal Act/30231/30240)
- Policy 13.1: The City shall plan for types and patterns of development which minimize water pollution, air pollution, fire hazard, soil erosion, silting, slide damage, flooding and severe hillside cutting and scarring. (Coastal Act/30250)
- Policy 15.1: The City will encourage the use of alternate energy systems, including passive solar and architectural and mechanical systems, in both commercial and residential development. (Coastal Act/30253)
- Policy 15.2: The patterns of proposed subdivisions and the orientation and design of structures on lots shall be designed with the objective of maximizing the opportunities for solar energy use and energy conservation.
- Policy 15.3: Energy conserving construction standards and requirements shall be enforced in the field inspection of new construction.

3.6.3. Thresholds for Determination of Significance

This section lists the thresholds used to conclude whether an impact to greenhouse gases would be significant.

Guidelines for Determination of Significance

A project would be considered to have a significant impact if it would:

- 1) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
- 2) Conflict with an applicable plan or policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

3.6.4. Analysis of Project Effects and Significance Determination

Impact 3.6-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

The vast majority of individual projects do not generate sufficient GHG emissions to create a project-specific impact through a direct influence to climate change; therefore, the issue of climate change typically involves an analysis of whether a project's contribution towards an impact is cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (CEQA Guidelines, Section 15355).

For future projects, the significance of GHG emissions may be evaluated based on locally adopted quantitative thresholds, or consistency with a regional GHG reduction plan (such as a Climate Action Plan). The City of Encinitas and the SDAPCD do not have specific emissions thresholds for development projects. Therefore, the City uses the California Air Pollution Control Officers Association suggested annual significance threshold of 900 MT CO₂E to assess significance for project-related GHG emissions. To determine whether GHG emissions associated with the proposed project are "cumulatively considerable," consistency with applicable GHG emissions reductions strategies recommended by the City of Encinitas 2018 Climate Action Plan is discussed herein.

GHG emissions associated with construction and operation of the proposed Project and existing development have been estimated using California Emissions Estimator Model (CalEEMod) version 2016.3.2.

Construction Emissions

Construction of the proposed Project would generate temporary GHG emissions primarily associated with the operation of construction equipment and truck trips. Site preparation and grading typically generate the greatest emission quantities because the use of heavy equipment is greatest during this phase of construction. Emissions associated with the construction period were estimated based on the projected maximum amount of equipment that would be used onsite at one time. Air districts have recommended amortizing construction-related emissions over a 30-year period to calculate annual emissions.

Construction activity, including site preparation, is assumed to occur over a period of approximately 18 to 24 months beginning in early 2021 and concluding in December 2022. Based on CalEEMod results, construction activity for the Project would generate an estimated 1,127 metric tons of carbon dioxide equivalent (CO₂E), as shown in Table 3.6-1. Amortized over a 30-year period (the assumed life of the Project), construction of the proposed Project would generate 38 metric tons of CO₂E per year.

TABLE 3.6-1. ESTIMATED CONSTRUCTION-RELATED GHG EMISSIONS

Year	Annual Emissions (metric tons CO₂E)
2020	736
2021	391
Total	1,127
Amortized over 30 years	38 metric tons per year

Source: Birdseye Planning Group, 2019 (Appendix G).

Long Term Emissions

Long-term emissions relate to energy use, solid waste, water use, and transportation. Default values used in CalEEMod version 2016.3.2 are based on the California Energy Commission (CEC) sponsored California Commercial End Use Survey (CEUS) and Residential Appliance Saturation Survey (RASS) studies. CalEEMod provides operational emissions of CO₂, N₂O and CH₄. This methodology has been subjected to peer review by numerous public and private stakeholders, and in particular by the CEC. Therefore, it is considered reasonable and reliable for use in GHG impact analysis pursuant to CEQA.

Operation of onsite development would consume both electricity and natural gas. The generation of electricity through combustion of fossil fuels typically yields CO₂, and to a smaller extent, N₂O and CH₄. Natural gas emissions can be calculated using default values from the CEC sponsored CEUS and RASS studies which are built into CalEEMod. As shown in Table 3.6-2, the overall net increase in energy use at the Project site would result in approximately 316 metric tons of CO₂E per year.

TABLE 3.6-2. ESTIMATED ANNUAL ENERGY-RELATED GHG EMISSIONS

Emission Source	Annual Emissions (metric tons CO₂E)
Natural Gas	83
Electricity	233
Total	316

Source: Birdseye Planning Group, 2019 (Appendix G).

Emissions associated with area sources (i.e., consumer products, landscape maintenance, and architectural coating) were calculated in CalEEMod based on standard emission rates from CARB, USEPA, and district supplied emission factor values. Emissions from waste generation were also calculated in CalEEMod and are based on the IPCC's methods for quantifying GHG emissions from solid waste using the degradable organic content of waste. Waste disposal rates by land use and

overall composition of municipal solid waste in California was primarily based on data provided by the California Department of Resources Recycling and Recovery.

Emissions from water and wastewater usage calculated in CalEEMod were based on the default electricity intensity from the CEC's 2006 Refining Estimates of Water-Related Energy Use in California using the average values for Northern and Southern California. Emissions from mobile sources were quantified based on trip generation estimates included in CalEEMod version 2016.3.2 for congregate care facilities.

The CalEEMod results indicate that the Project would use approximately 18.2 million gallons of water per year. Based on the amount of electricity generated to supply and convey this amount of water, as shown in Table 3.6-3, the Project would generate approximately 89 metric tons of CO₂E per year. For solid waste generated onsite, it was assumed that the Project would not achieve a 75% diversion rate, as required by the California Integrated Waste Management Act of 1989 (AB 939). The CalEEMod results indicate that the Project would result in approximately 24 metric tons of CO₂E per year associated with solid waste disposed within landfills.

TABLE 3.6-3. ESTIMATED ANNUAL SOLID WASTE AND WATER USE GHG EMISSIONS

Emission Source	Annual Emissions (metric tons CO₂E)
Water	89
Solid Waste	24
Total	113

Source: Birdseye Planning Group, 2019 (Appendix G).

Mobile source GHG emissions were estimated using the average daily trips calculated by CalEEMod for the proposed Project. Table 3.6-4 shows the estimated mobile emissions of GHGs for the Project based on the estimated annual VMT of 971,786. CalEEMod does not calculate N₂O emissions related to mobile sources. As such, N₂O emissions were calculated based on the Project's VMT using calculation methods provided by the California Climate Action Registry General Reporting Protocol and fleet mix percentages calculated by CalEEMod. As shown in Table 3.6-4, the Project would generate approximately 425 metric tons of CO₂E associated with new vehicle trips.

As shown on Table 3.6-5, the combined annual emissions generated by the proposed Project would total approximately 892 metric tons per year in CO₂E. This total represents less than 0.001% of California's total 2016 emissions of 429.4 million metric tons. The majority (48%) of the Project's GHG emissions are associated with mobile sources. The 892 metric tons represent unmitigated BAU emissions. As noted above, the City of Encinitas uses a 900 MT CO₂E annual standard as the GHG emission threshold for land use projects. Project-related annual GHG emissions would not exceed

the threshold of 900 metric tons per year. Therefore, the Project's GHG emissions would not have a significant impact on the environment. Impacts under this criterion would be less than significant.

TABLE 3.6-4. ESTIMATED ANNUAL GHG MOBILE EMISSIONS

Emission Source	Annual Emissions (metric tons CO₂E)
Mobile Emissions (CO ₂ and CH ₄)	405
Mobile Emissions (N ₂ O)	20
Total	425

Source: Birdseye Planning Group, 2019 (Appendix G).

TABLE 3.6-5. TOTAL ANNUAL GHG EMISSIONS BY SOURCE

Emission Source	Annual Emissions (metric tons CO₂E)
Construction	38
Operational	
Energy	316
Water	89
Solid Waste	24
Mobile	425
Total	892

Source: Birdseye Planning Group, 2019 (Appendix G).

Impact 3.6-2: Conflict with an applicable plan or policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

In the absence of specific federal, state or local thresholds, GHG emissions associated with a specific project are not considered cumulatively significant if design and operational features incorporated into a project reduces emissions by more than 41% or to less than 900 MT CO₂E annually. The 882 MT CO₂E BAU GHG emissions would not exceed the 900 MT CO₂E annual screening threshold. Therefore, under baseline conditions the Project could not be considered a significant contributor to cumulative GHG emissions.

The Project would implement the following design strategies to lower GHG emissions. These features focus on reducing energy consumption, water demand and transportation vehicles miles traveled and include the following:

- Exceed Title 24 standards by 15%;
- Install energy efficient mechanical systems and appliances;

- Install low flow plumbing fixtures;
- Implement water conservation system to reduce demand by 20%;
- Install water efficient irrigation system to achieve 6.1% reduction in water use;
- Install pedestrian network improvements to facilitate site access for pedestrians accessing the facility by foot or from the adjacent park and ride lot; and
- Project features that reduce VMT include the proximity to the Manchester Avenue Park-and-Ride lot which is under construction adjacent to and west of the site as well as the density of units constructed on-site.

In addition, the Project would implement the following measures from the City of Encinitas Climate Action Plan:

- **BE-2 Require New Single-Family Homes to Install Solar Water Heaters.** Require all new single-family homes to install solar water heaters or other efficiency technology, unless the installation is impracticable due to poor solar resources. Other efficiency technology would include installation of a renewable energy technology system that uses renewable energy as the primary energy source for water heating.
- **RE-2 Require New Homes to install Solar Photovoltaic Systems.** Require new single-family homes to install at least 1.5 Watt solar per square foot or minimum 2 kilowatt (kW) per home. Require new multi-family homes to install at least 1 Watt solar per square foot or minimum 1 kW per unit, unless the installation is impracticable due to poor solar resources.
- **CET-4 Require Residential Electric Vehicle Charging Stations.** Require new residential units to install EVCS equipment. For single family residence, install complete 40-Amp electrical circuit (EV Ready). For multi-family residences, install EVCS equipment at 5% of the total number of parking spaces.
- **ZW-1 Implement a Zero Waste Program.** Implement a Zero Waste Program to reduce waste disposal from residents and businesses in the community. By 2020, divert 65% of total solid waste generated (equivalent to 5.3 pounds per capita per day waste disposal). By 2030, divert 80% of total solid waste generated (equivalent to 3 pounds per capita per day waste disposal).

Therefore, Project emissions would be less than 900 MT CO₂E per year as demonstrated above under Impact 3.6-1. The Project would not conflict with an applicable plan or policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases, and no significant impact would occur. Impacts under this criterion would be less than significant, and no mitigation is required.

3.6.5. Mitigation Measures

The proposed Project would not result in significant impacts related to GHG emissions, and no mitigation measures would be required.

3.6.6. Cumulative Impact Analysis

Project-related GHG emissions are not confined to a particular air basin but are dispersed worldwide. Therefore, impacts under Impact 3.6-1 and 3.6-2 are not project-specific impacts, but the proposed Project's contribution to the cumulative impact of global warming. The design and operational features incorporated into the proposed Project reduce emissions to less than 900 MT CO₂E annually. Although other cumulative projects in the area might exceed the City's threshold or otherwise not align with applicable plans and regulations, these projects would be required to implement GHG reduction measures. Even if other such projects did not achieve a reduction to below the City's threshold, such projects would be the cause of any cumulatively considerable impact as opposed to the proposed Project. The Project's GHG emissions and contribution to global climate change impacts would be below the City's threshold and therefore not cumulatively considerable.

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